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49. (new) A test kit useful for detecting a target lipocalin-encoding polynucleotide indicative of breast tissue disease in a test sample, comprising a container containing at least one polynucleotide selected from the group consisting of a polynucleotide having at least 90% identity over the entire length of SEQUENCE ID NO 1, SEQUENCE ID NO 2, SEQUENCE ID NO 4, SEQUENCE ID NO 5 or complements thereof.

REMARKS

The Examiner states that although this application is a continuation-in-part of the parent application 08/879,354, additional materials (SEQ ID NO: 3, SEQ ID NO: 4 and SEQ ID NO: 5) are added to all of the elected claims in this application and therefore, the claims considered receive priority back to the instant filing date of June 19, 1998 rather than to the effective filing date of the parent application 08/879,354 of June 1997.

Applicant will clarify. SEQ ID NO 3 is new except the last 4 nucleotides are the complement of nucleotides 354-357 of SEQ ID NO 3 of the parent. Position 1-357 SEQ ID NO 4 of the instant application are the same as SEQ ID NO 3 of the parent and position 1-357 of the instant SEQ ID NO 5 is the same as SEQ ID NO 3 of the parent, Position 358 to 692 of instant SEQ ID NOS 4 and 5 are new to the instant application. The claims have been amended such that claims 1-16, 30, 33 35 and 38-42 get priority to the parent case (i.e., June 1997) and new claims 45-49 receive the instant priority date (i.e., June 1998).

Claims 1-16, 30, 33, 35, 38- 42 are rejected under 35 U.S.C. 112, first paragraph that the Examiner alleging the specification does not reasonably provide enablement for BS124 polynucleotides having "at least 50% identity with" SEQ ID NO: 1-5 and fragments or complements thereof, or for genes encoding BS124 proteins having "at least 50% identity" with SEQ ID NO: 22.

As a result, Applicant has raised the percent identity and amended the claims to recite that this percent identity is "over the entire length" of the Seq. ID No. It is therefore respectfully requested that this rejection be withdrawn.

Claim 11 is rejected under 35 U.S.C. 102 (b) as being anticipated by Hawkins (GenBank Accession No: AC002098, May 1997). The Examiner states that Hawkins'

teachings clearly encompass polynucleotides having "at least 50% identity" with sequences encompassed by the instant claims, as well as fragments and complements thereof.

As a result, Applicant has raised the percent identity and amended the claims to recite that this percent identity is "over the entire length" of the Seq. ID No. It is therefore respectfully requested that this rejection be withdrawn.

Claim 11 is rejected under 35 U.S.C. 102 (a) as being anticipated by Hawkins GenBank Accession No: AC002320, July 1997.

As a result, Applicant has raised the percent identity and amended the claims to recite that this percent identity is "over the entire length" of the Seq. ID No. It is therefore respectfully requested that this rejection be withdrawn

Claims 10 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nangaku et al. (Immunogenetics, 1997) in view of Hawkins (GenBank Accession No: AC002098, May 1997) or Hawkins GenBank Accession NO: AC002320, July 1997) further in view of Cohen (U. S. Pat. 5,939,265).

As a result, Applicant has raised the percent identity and amended the claims to recite that this percent identity is "over the entire length" of the Seq. ID No. It is therefore respectfully requested that this rejection be withdrawn

Claims 1-16, 30, 33, 35, 38-42 are rejected under 35 U.S.C. 112, first paragraph. The Examiner states that the specification does not adequately provide a written description for polynucleotides having 50% identity with SEQ ID NO: 1, 2 or having 60% identity with SEQ ID NO: 4, 5. Specifically, the Examiner states that the specification has not defined a structural feature of the polynucleotides described in the Sequence ID Listing which would be common to a substantial portion of the genus.

As a result, Applicant has raised the percent identity and amended the claims to specify that the claimed nucleic acid sequences encode a lipocalin protein.

As known to those skilled in the art, sequence similarity places BS124 within this family of lipocalins. Some lipocalin proteins show a wide diversity of primary sequence, they all share the same overall 3D structure - an eight-stranded anti-parallel beta sheet

barrel, one end of which is closed by a feature near the N-terminal. For example, a common lipocalin, Major Urinary Protein (MUP) whose 3D structure is well known, shows the eight-stranded anti-parallel beta sheet barrel.

The attached publication further shows BS 124 as a member of the lipocalin family. {Lacazette et al, Human Molecular Genetics, 9, 289-301 (2000) (Exhibit A)} This article describes a nucleic acid which codes for a lipocalin which is 100% identical to BS124. The article further describes BS 124's specificity exclusively in genital organs, such as testis and prostate in males and breast and vagina in females.

Exhibit A, further illustrates BS124 tissue specificity as predominantly found in genital tissue, including the female breast. This specificity is also shown in Example 1 of the instant specification, which details how BS 124 is 26 times more prevalent in breast tissue than in the rest of the body based on quantitative occurrence in a commercial EST data base (Incyte Lifeseq).

Therefore, based on the amendments to the claims and the above remarks it is respectfully requested that this rejection be withdrawn

Claims 3-9, 40 are rejected under 35 U.S.C. 112, first paragraph, the Examiner alleging that the specification, while being enabling for detecting SEQ ID NO: 1, 2, 4, 5, does not reasonably provide enablement for detecting a polynucleotide indicative of breast tissue disease by detecting a sequence having at least 50% identity with SEQ ID NO: 1, 2, or at least 60% identity with SEQ ID NO: 4, 5. Additionally, the Examiner states that "breast tissue disease" is a broad term, which is not limited to breast cancer but would also encompass any type of disease of breast tissue, including infections of breast tissue, and mammary gland disorders, for example. The Examiner concludes the only breast disease tissue analyzed in the specification was breast cancer tissue.

Therefore, the Applicant has limited the claims to "breast cancer" has raised the percent identity and it is respectfully requested that this rejection be withdrawn

Claim 38 is rejected under U.S.C. 102(e), as being clearly anticipated by Conklin (U.S. Pat 6,020,163, February 2000). The Examiner states that Conklin teaches a lipocalin homolog polypeptide, SEQ ID NO: 2, which contains 170 amino acids which are 100% identical to the 170 amino acids of SEQ ID NO: 22.

Applicant disagrees. Conklin has a provisional priority date of August 6, 1997 and the instant case has a priority date of June 20, 1997 thereby pre-dating this Conklin reference. It is respectfully requested that this rejection be withdrawn.

CONCLUSION

In view of the aforementioned amendments and remarks, the aforementioned application is in condition for allowance and Applicant requests that the Examiner withdraw all outstanding objections and rejections and to pass this application to allowance.

Respectfully

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